# PRV-LX1 DVD-Video Recorder

## Field Training Guide

Rev.1

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Pioneer *sound.vision.soul*

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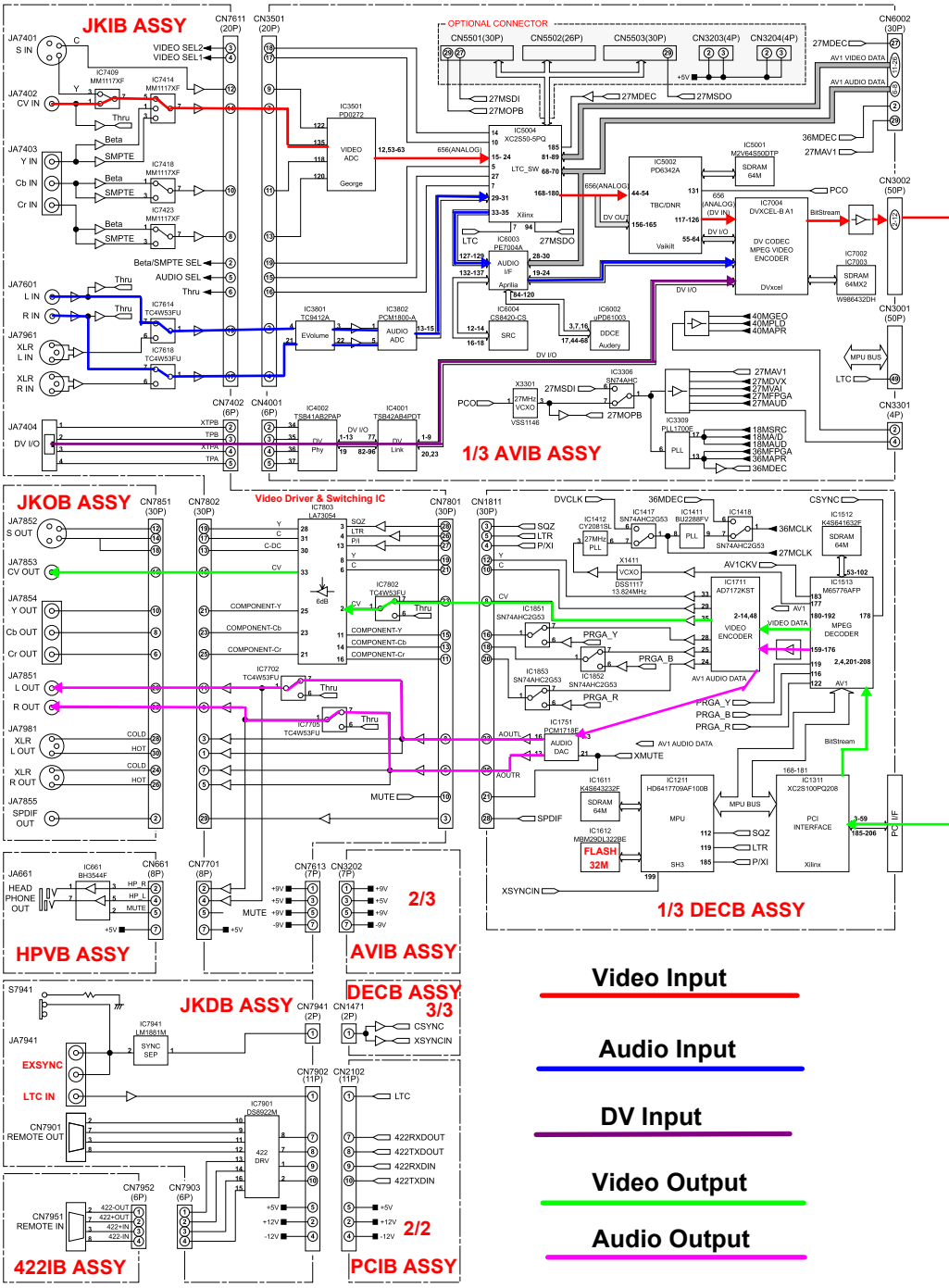
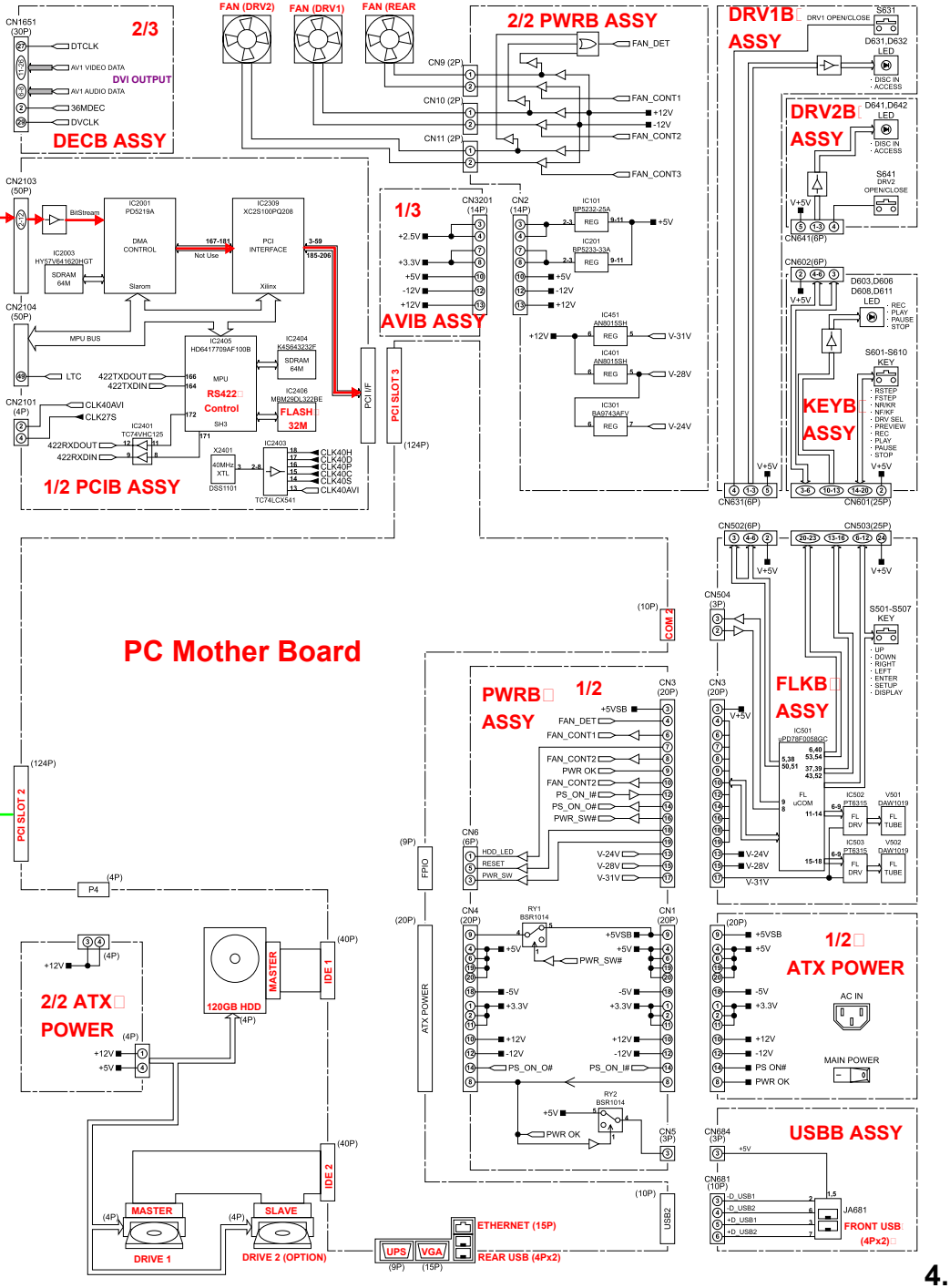
# PRV-LX1 DVD-Video Recorder



# Overall Block Diagram



# Block Diagram Overview

### (JKIB Assembly)

All inputs Video and Audio (Composite, Component Beta or SMPTE, S-Video, DV, Balanced and Unbalanced Audio) enter and pass though the JKIB assembly and enter the AVIB assembly. If using the composite input in through mode the unprocessed audio and video pass back directly to the JKOB output assembly for monitor viewing.

### (AVIB)

Video and Audio signals entering the AVIB assembly are subject to analog to digital conversion, time based correction and digital noise reduction will be added if selected by the user. On this assembly the signals next are MPEG encoded and sent out to the PCIB assembly.

### (PCIB)

The two main functions of the PCIB assembly are.

1. RS422 control interface.
2. PCI interface for the MPEG encoded signals.

Output signals from this board enter the PC Mother board (PCI slot 3)

### (DECB)

The DECB assembly receives its input from the PC Mother board (PCI slot 2) into its PCI interface conversion IC. After conversion back to a MPEG stream the signals pass through the MPEG decoder and digital to analog converters for both audio and video. At this point the analog video and audio output to the JKIB assembly.

### (JKOB)

The JKOB or jack panel output board receives input audio and video signals from the JKIB assembly. In turn it outputs directly to the back panel.

# Block Diagram Overview

**(PC Mother Board)**

The main circuit board assembly in this device is a very high quality Pentium based personal computer main board. It interfaces directly with the front panel control by an RS232 connection on COM 2. In addition it has front and rear USB ports, a RS232 connection for a UPS, 3 PCI slots (2 used), an Ethernet connection and VGA output. Main system processor (Intel Celeron 2 GHz) with 256 Mb ram.

**(ATX Power)**

The ATX power assembly is similar to a home or office PC supply. It provides +12, -12, +5, -5 and +3.3 voltage supplies to the PWRB assembly.

**(PWRB)**

This main power supply assembly provides DC supply to all circuit boards and drives 3 of the 5 fans used in this product.

**(JKDB)**

This assembly contains the RS422 interface and output RS422 connector. It also interfaces the external sync input to the DECB board and the LTC (linear time code) to the PCIB board.

**(422IB)**

The RS422 input connector assembly provides input to the 422 driver IC located on the JKDB board.

**(HPVB)**

Headphone output volume and driver assembly. Located on the front panel.

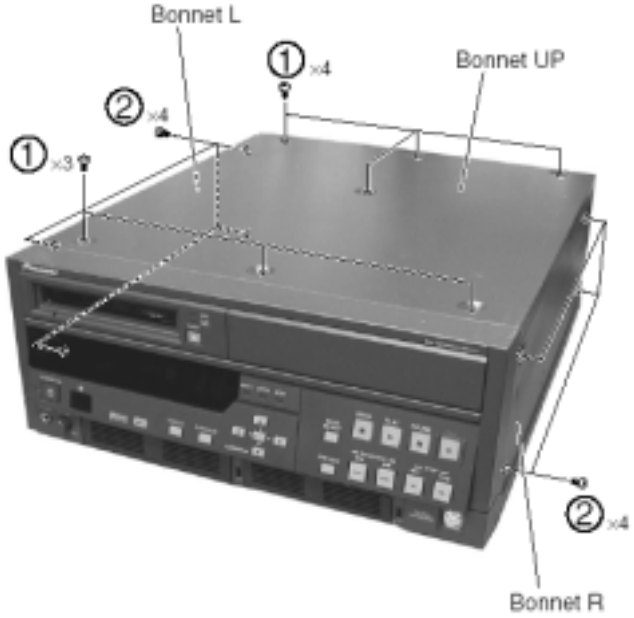
**(FLKB)**

Front panel assembly. This board includes the florescent display driver and IR remote control decoder. This board along with its main CPU communicate directly to the PC motherboard through the RS232 Com 2 port.

# PRV-LX1 Disassembly

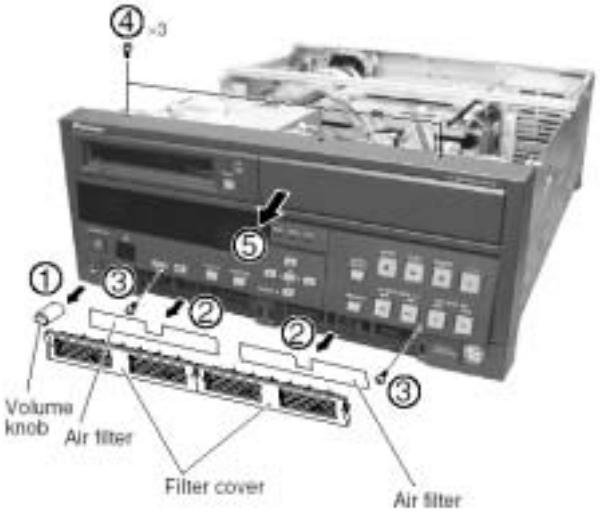
## 1. Top cover and side panels

1. Remove seven screws and lift off the top cover.
2. Remove eight screws for the L and R side covers.



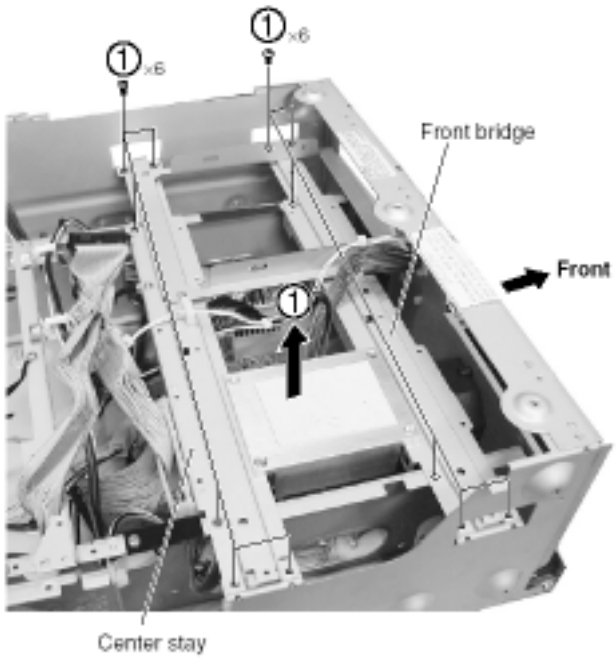

## 2. Front Panel

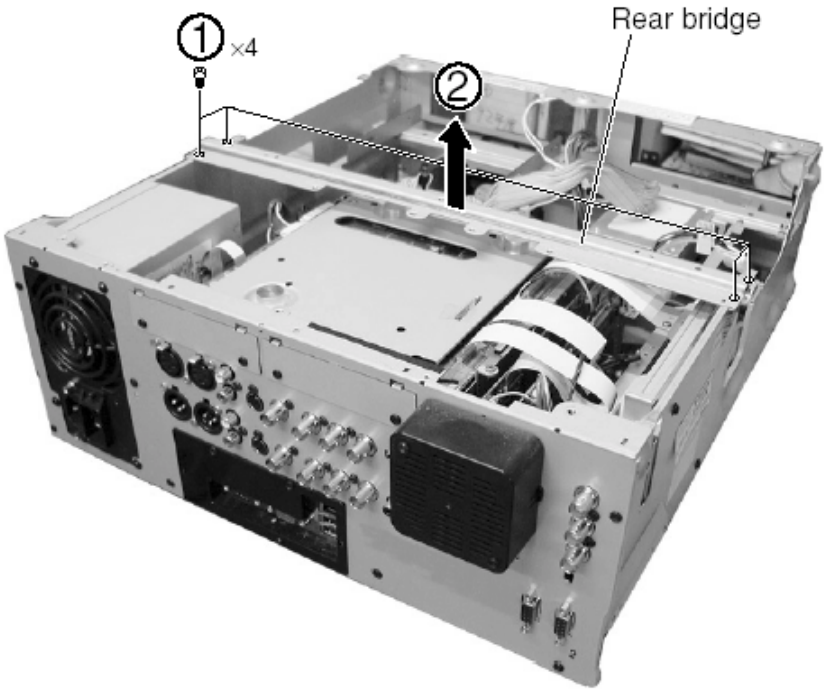
1. Remove the front volume knob.
2. Remove the Filter covers and Air filters.
3. Remove two screws.
4. Remove three screws
5. Remove Front Panel Unit.



**Front & Rear Bridges must be removed in order to access drives and board assemblies.**

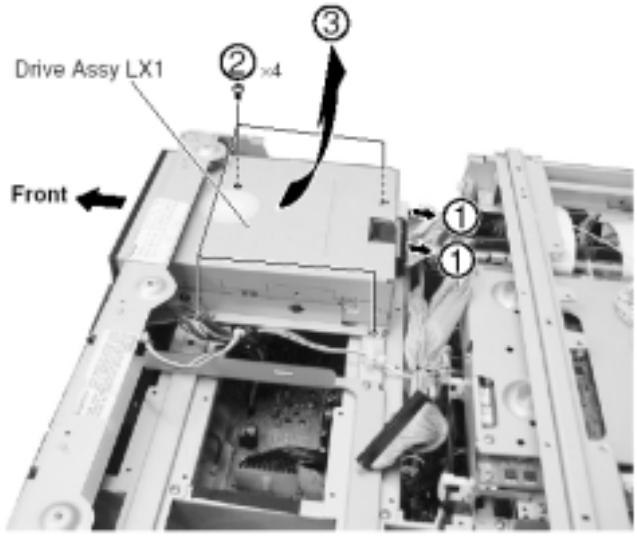
1. Remove 12 screws for the front & 8 screws for the rear bridge.
2. Remove bridges.



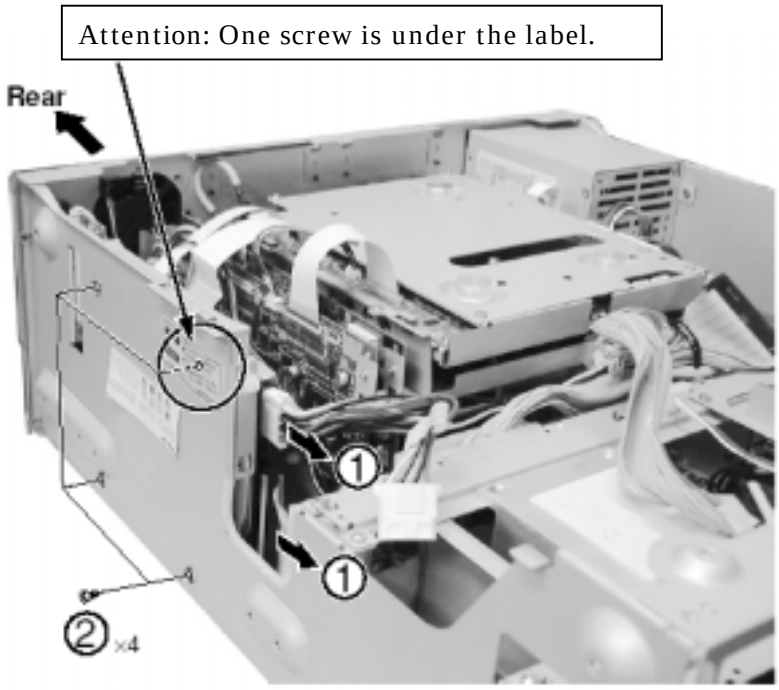
### 3. Drive Assy LX1

1. Disconnect two connectors.
2. Remove four screws and DVDR Drive Assembly.

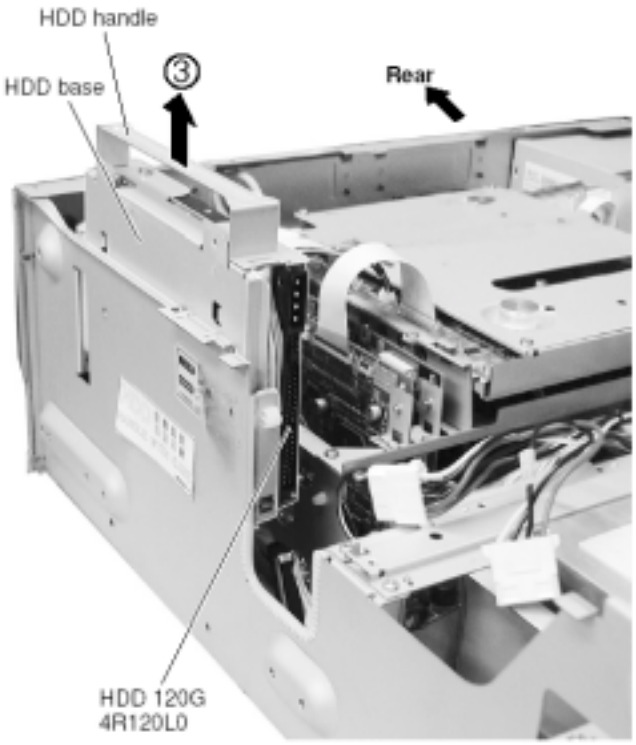


## 4. HDD Assy

1. Disconnect two connectors.
2. Remove four screws.

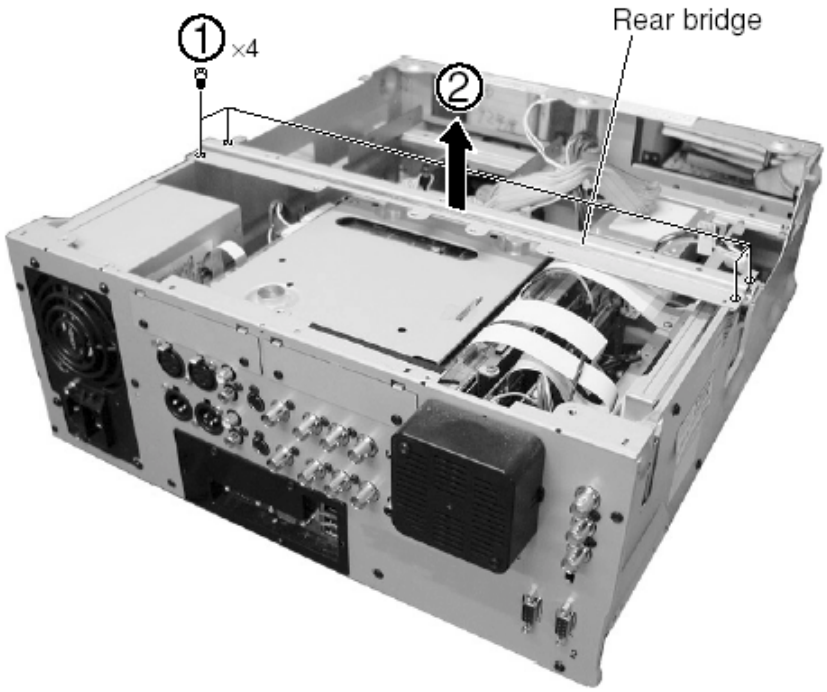



3. Pull up on the handle and remove HDD Assy.

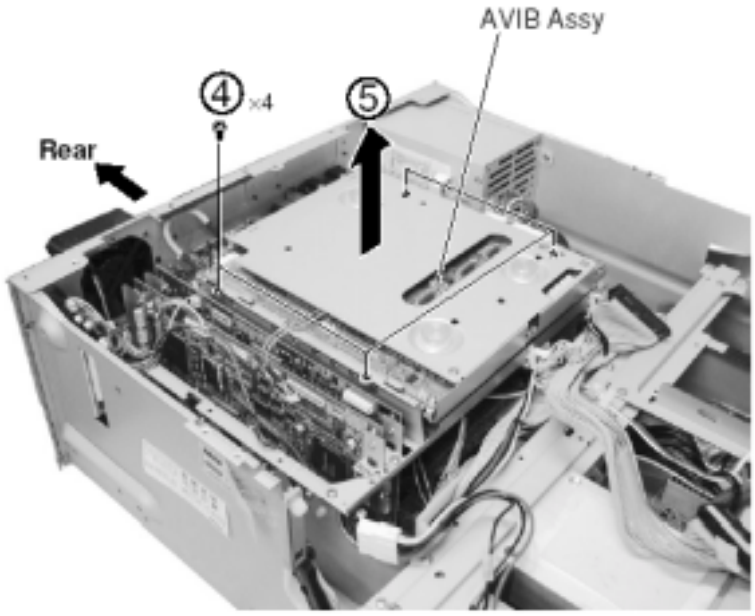


## 5. AVIB Assy

1. Remove four screws.
2. Remove Rear bridge.

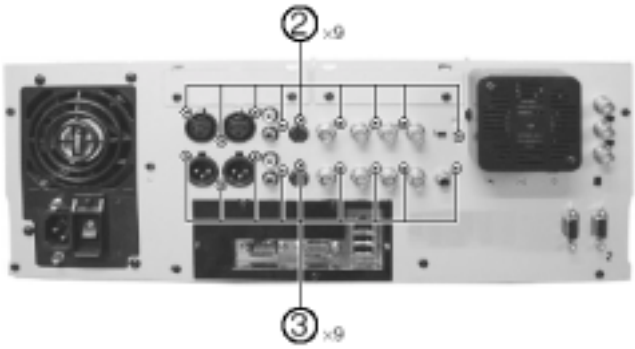



3. Disconnect four FFC cables and four connectors.
4. Remove four screws.
5. Remove AVIB Assy with AVI shield and base.

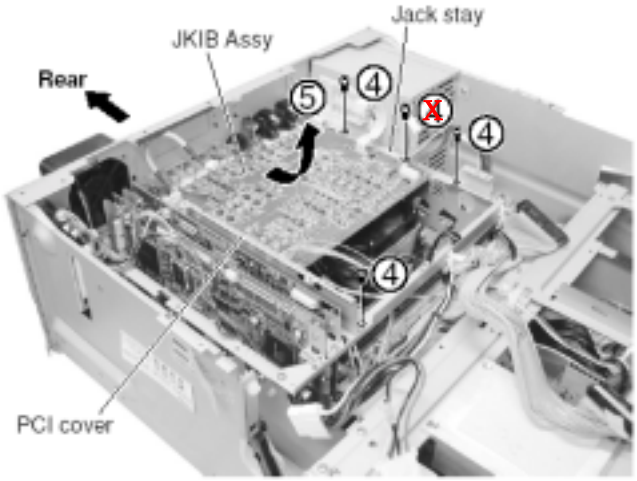


## 6. JKIB Assy & JKOB Assy

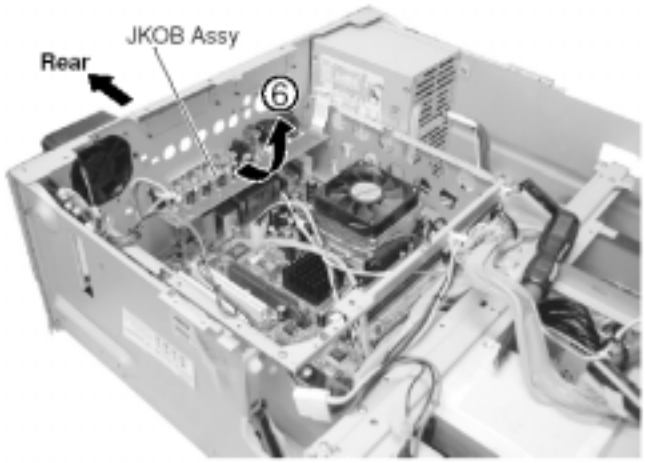
1. Disconnect two FFC cables and a connector.
2. Remove nine screws (JKIB Assy).
3. Remove nine screws (JKOB Assy).




4. Remove three screws.
5. Remove JKIB Assy with PCI cover and Jack stay.

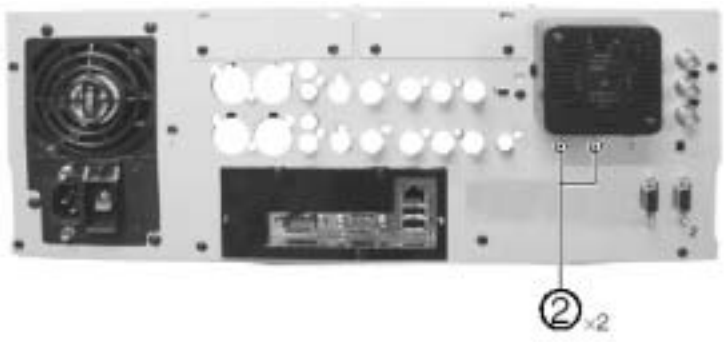



6. Remove JKOB Assy.

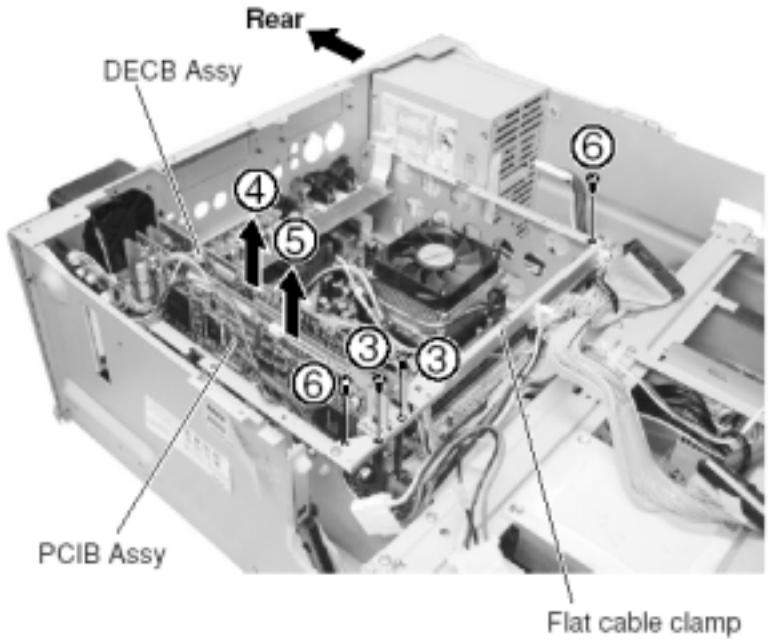


## 7. DECB Assy & PCIB Assy

1. Disconnect two connectors.
2. Remove two screws of Rear Panel.

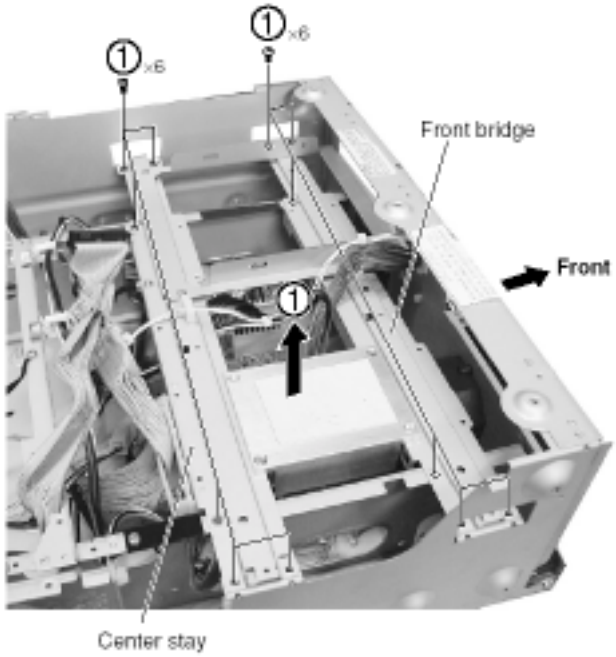



3. Remove two screws.
4. Pull up DECB Assy from PCI slot of Mother Board.
5. Pull up PCIB Assy from PCI slot.
6. Remove two screws, 4P Power connector and Flat cable clamp.

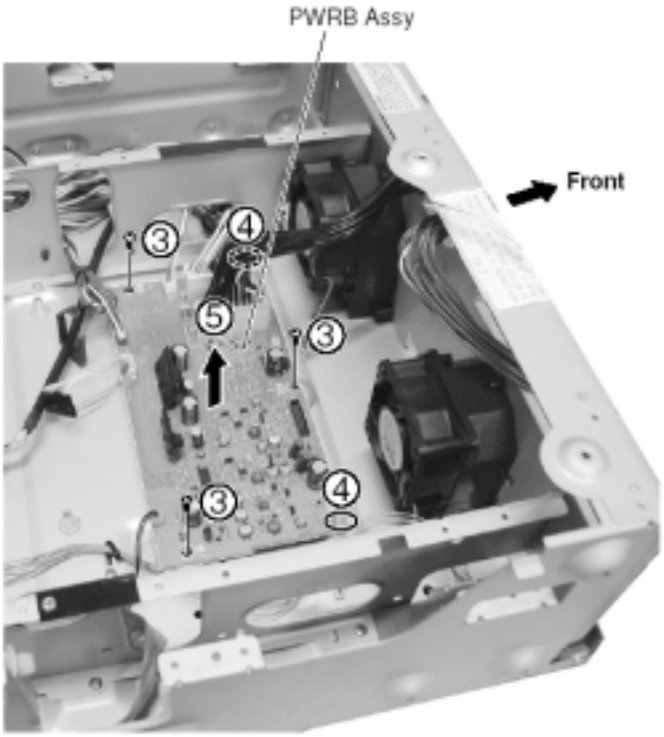


## 8. PWRB Assy

1. Remove Center stay and Front Bridge with 12 screws.

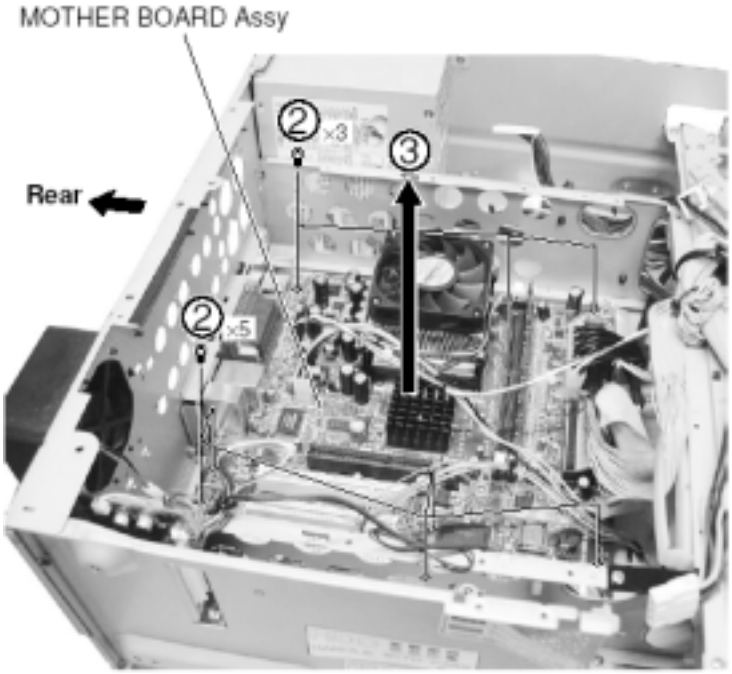



2. Disconnect eight connectors.
3. Remove three screws.
4. Remove the hook of Card edge spacer.
5. Remove PWRB Assy.



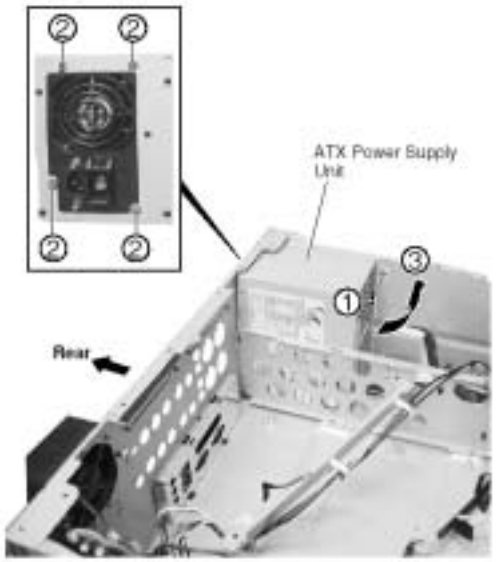
### 9. MOTHER BOARD Assy

1. Disconnect two connectors.
2. Remove seven screws.
3. Remove MOTHER BOARD Assy



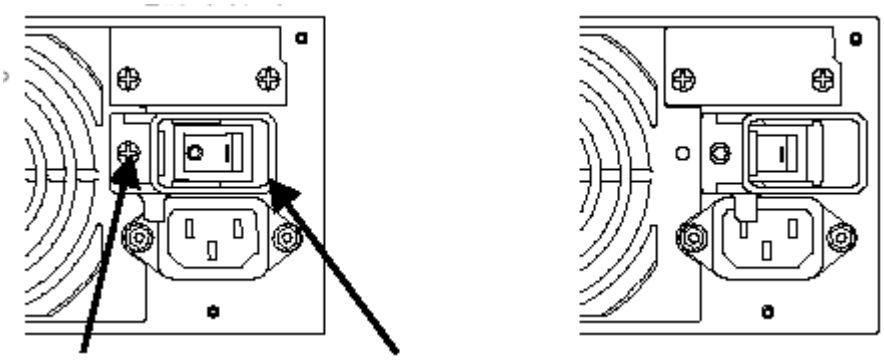

### 10. ATX Power Supply Unit

1. Remove one screw inside.
2. Remove four screws outside.
3. Remove ATX Power Supply Unit.



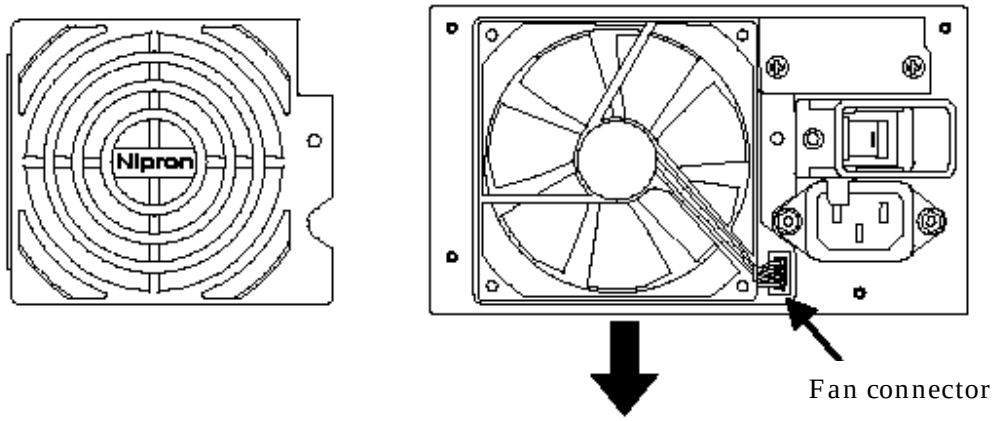
## 11. Exchange the FAN of Power Supply

1. Remove a screw and move switch barrier.

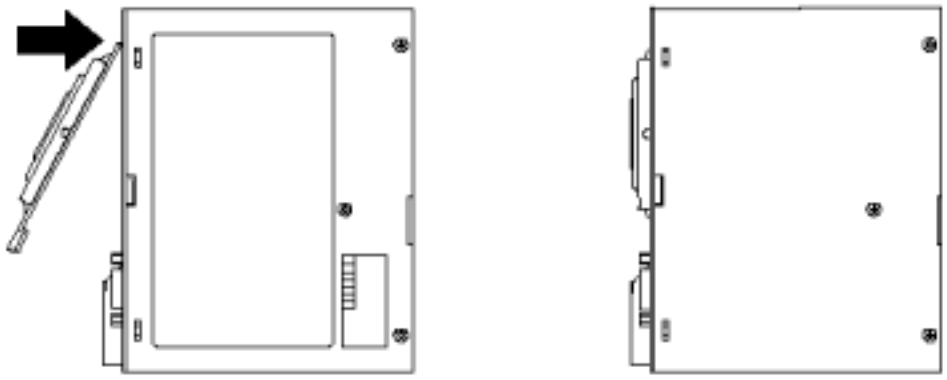


1. screw　　Switch barrier

2. Remove Fan cover and disconnect a connector.

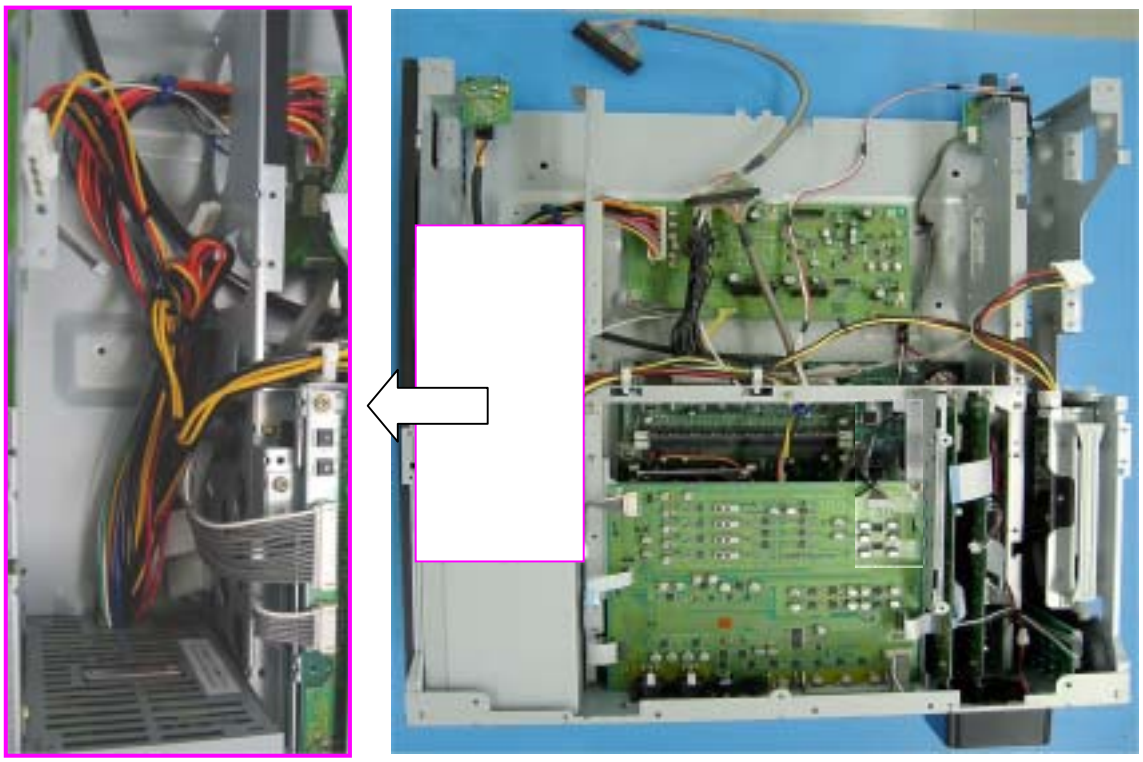



3. Exchange the FAN.
4. Connect FAN connector.
5. Install Fan cover.



6. Move switch barrier and secure a screw.

***Cable Styling of Power Supply**



# Service Mode

Test mode Function List Using Service Remote Control (GGF1067 or GGF1381)

| Input Remote Control Code | | | Function | memo |
|---|---|---|---|---|
| [ESC]+[TEST] | | | Test Mode | |
| | [CX] | | FAN Test Mode | |
| | | [0] | All FAN ON | |
| | | [1] | All FAN OFF | |
| | | [2] | Left FAN ON | |
| | | [3] | Left FAN OFF | |
| | | [4] | Right FAN ON | |
| | | [5] | Right FAN OFF | |
| | | [6] | Rear FAN ON | |
| | | [7] | Rear FAN OFF | |
| | | [9] | Exit | |
| | [P.RUN] | | LED/FL Test Mode | |
| | | [0] | Exit | |
| | | [1] | Turn on all FL/LED light | |
| | | [2] | Turn off all FL/LED light | |
| | [TV/LDP] | | Front Panel switch Test Mode | *1 |
| | | [0] | Exit | |
| | [STEREO]+[8] | | Region number of Drive1 on display | |
| | [STEREO]+[9] | | Region number of Drive2 on display | |
| | [REP.A] | | System Information on display | *2 |
| | | [0] | Exit | |
| | | [1] | Main System on display | |
| | | [2] | USB Interface on display | |
| | | [3] | Network Interface on display | |
| | | [4] | Primary Master Drive on display | |
| | | [5] | Primary Slave Drive on display | |
| | | [6] | Secondary Master Drive on display | |
| | | [7] | Secondary Slave Drive on display | connected Drive2 |
| | | [8] | Error History of Drive1 on display | |
| | | [9] | Error History of Drive2 on display | connected Drive2 |
| | [REP.B] | | Loop back Test Mode | |
| | | [0] | Exit | |
| | | [1] | RS-422A Loop Back Test | |
| | | [2] | RS-232C Loop Back Test | |
| | | [3] | RS-422A Loop Back Test (Error Stop) | |
| | | [4] | RS-232C Loop Back Test (Error Stop) | |
| | [A.MON] | | Power On Time Clear | |
| | | [0] | HDD Access Time | **Caution! This will clear the timer** |
| | | [1] | Power On Time of PRV-LX1 | **Caution! This will clear the timer** |
| | | [8] | Copy the setting file | for using FTP(Network) |
| | | [9] | Copy the log file | for using FTP(Network) |

# Service Mode

| Input Remote Control Code | | | Function | memo |
|---|---|---|---|---|
| [ESC]+[TEST] | | | Test Mode | |
| | [PLAY] | | Measuring Error Rate | |
| | | [SCAN F] | +0x10000 | |
| | | [SCAN R] | -0x10000 | |
| | | [1] | Start measuring of Drive1 | |
| | | [2] | Start measuring of Drive2 | |
| | | ▲/■ | Stop measuring | |
| [ESC]+[TEST] | | [0] | RS-422A and 232C Interface Test | Auto start [1]-[4] |
| | | [1] | RS-422A Loop Back Test | |
| | | [2] | RS-232C Loop Back Test | |
| | | [3] | LAN Test | |
| | | [4] | USB Test | |
| | | [5] | Measuring Error Rate of Drive1 | *3 |
| | | [6] | Measuring Error Rate of Drive2 | |
| | | [7] | LTC on FL | |
| | | [CLEAR] | Clear on display | |
| | | [ESC] | Escape Test Mode | |
| (ESC)+(front panel buttons or remote control | | | Open or close drive trays | |
| [ESC]+[DISP] | | | Debug Mode | *4 |
| | | [DISP] | Enter next page | |
| | | | ---Page1--- : PRV-LX1 Information | |
| | | | ---Page2--- : DVD Play Information | |
| | | | ---Page3--- : Decode Information of DECB Assy | |
| | | | ---Page4--- : Encode Information of PCIB Assy and AVIB Assy | |
| | | | ---Page5--- : Encode Information of Application | |
| | | | ---Page6--- : Linux information | |

*1: Test mode of front panel button input

When you enter this mode all segments on the FL display light up. Pressing front panel keys will turn off segments one by one.

After the all keys have been pushed, only 3 blocks remain on. (only 2 blocks-> with 2 drives)

*2: System Information on display

[1]: Main System

-CPU --- Confirmation of the CPU clock

-Memory --- Confirmation of the capacity of memories

-User Data --- Confirmation of the free space of the HDD (User Area)

-PCI --- Confirmation of the PCI boards was recognized from Linux OS

[2]: USB

- Connected USB products on display. (keyboard & mouse)

[3]: Network

-IP Address/Network/MAC Address

-10base/100base

[4]: HDD (IDE Primary-Master)

-Information of connected HDD

[5]: HDD (IDE Primary -Slave)

-No connect

[6]: DVD-R/RW (Drive1)

-Information of Drive1

[7]: DVD-R/RW (Drive2)

-Information of Drive2

[8]: Error History of Drive1

[9]: Error History of Drive2

*3: Measuring the error rate of DVD drive unit

[5]: Drive1

-Insert the disc and select this function.

-Threshold level (3.3e-3) DVD-ROM,-R-RW

[6]: Drive2

-Insert the disc and select this function.

-Threshold level (3.3e-3) DVD-ROM,-R-RW

*4: Debug mode

-[ESC]+[DISP] : Enter the debug mode.

-[DISPLAY] : Select the next page.

-[SIDE-A or B] : Enter the sub mode of debug mode.

-[ESC] : Escape the debug mode.

---Page 1---: PRV-LX1 information

-Program : application version

-OS : os version

-FLCOM : FL cpu version

-VD-RW : Firmware version

-Shimuke : 0: Japan model, 1: KU model (USA), 2: WY model (EU)

: (1/1/-1) : Region number (Decoder board/Drive1/Drive2)

: -1 means no connection

---Page 2---: Engineering use only.

--Page 3---: Decode Information of DECB Assy

# Service Mode

-Select the error history --> Push [SIDE-A] on GGF1067 one time.

“No device error” on display stands for no error.

“The numbers on display stands for error code.

(Ex.)

| |
|---|
| 10-030305210700 40-030306093005 |
| 50-030401112233 04-030405131500 |

EE-YYMMDDHHMMSS EE: Error code, YY…..SS: Date

50(error) stands for 40(error) and 10(Error) ware occurred at the same time.

| Error Code | Detail |
|---|---|
| 01 | Xiline Configurations Error |
| 04 | SH SDRAM Access error |
| 10 | Video Encoder Initialize Error |
| 20 | AV Decoder Initialize Error |
| 40 | AV Decoder SDRAM Access Error |

**Note: Press Side-A again for more error information. Pages 3, 4 and 5.**

---Page 4---: Encode Information of PCIB and AVIB Assy

-Select the error history --> Push (Side-A) to Enter the sub mode.

| |
|---|
| 2003/07/29 10:30:20 == 09 03 == |
| ( Data ) (EC) |

| Error Code | Detail | Error Code | Detail |
|---|---|---|---|
| 01 | Data Read Time error | D3 | Reset Error (AUDIO Enc.) |
| 02 | Copy Protection Error | D4 | Initialize Error (AUDIO Enc.) |
| 03 | task 09: Illegal frame number Error | D5 | Standby Error (AUDIO Enc.) |
| 03 | task 32: No digital signal Error | D6 | Command Error (AUDIO Enc.) |
| 04 | PCI Destination Address Timeout Error | D7 | Command Timeout Error (AUDIO Enc.) |
| 05 | PCI Map Timeout Error | DC | Hard Error (VIDEO Enc.) |
| C9 | Hard Error | DD | Reset Error (VIDEO Enc.) |
| CA | Reset Error | DE | Initialize Error (VIDEO Enc.) |
| CA | task 0A: Stream Buffer Full Error | DF | Standby Error (VIDEO Enc.) |
| CB | Initialize Error | E0 | Command Error (VIDEO Enc.) |
| CC | Standby Error | E1 | DV Decode Error |
| CD | Command Error | E2 | DV Encode Error |
| CE | Stream Timeout Error | E3 | FS Change Error (before) |
| CF | Command Timeout Error | E4 | FS Change Error (After) |
| D0 | Buffer Full Error | E5 | Command timeout Error (VIDEO Enc.) |
| D2 | Hard Error (AUDIO Enc.) | E6 | Command Execute Error (VIDEO Enc.) |

**Notes: No page 5 unless in record mode. Page 5 functions the same as page 4.**

**Page 6 for Engineering use only.**

# Viewing and Confirmation of log files

<Items Needed>

1. Personal Computer with LAN card
2. Network cable (Cross type)

<Method of opening a log file>

1. Setup Network connection of the personal computer.
   - IP Address: 192.168.0.15
   - Subnet mask: 255.255.255.0
   - Gateway: 192.168.0.1
2. Turn off the personal computer.
3. Set Network connection of the PRV-LX1.
   - IP Address: 192.168.0.16
   - Subnet mask: 255.255.255.0
   - Gateway: 192.168.0.1
4. Turn off PRV-LX1.
5. Connect the personal computer to PRV-LX1 with Network cable.
6. Turn on PRV-LX1 and the personal computer.
7. Open the log files using IE (Internet Explorer).
8. Input “ftp://192.168.0.16” at IE.
9. Input the user and password.
   - User: DVDRecService
   - Password: DVDRecService
10. Open “poweron.log” using Internet Explorer (save file and open with Excel)

<Log list>

POWER-ON=7 ------- **Power on Times**
1 : Power On : Mon Jun 23 21:19:26 EDT 2003 ------- **Power on date**
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
Power Off : Mon Jun 23 22:12:16 EDT 2003 ------- **Power off date**
2 : Power On : Tue Jul 8 10:10:12 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
3 : Power On : Tue Jul 8 10:12:32 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
----- Found a power failure in the previous power on ----- ----**Found a power failure**

Power Off : Tue Jul 8 10:15:16 EDT 2003
4 : Power On : Tue Jul 8 14:10:22 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
!!!!!! The root file system has been recovered !!!!!!!! ---**The files have been recovered**

Power Off : Tue Jul 8 14:12:16 EDT 2003
5 : Power On : Tue Jul 8 15:10:22 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
!!!!!! NO DECODER BOARD ERROR (REBOOT) !!!!!!!! --**Not detect decoder unit**

6 : Power On : Tue Jul 8 16:10:22 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx
!!!!!! NO DECODER BOARD ERROR AGAIN !!!!!!!! --**Not detect decoder unit**
Power Off : Tue Jul 8 16:12:16 EDT 2003
7 : Power On : Tue Jul 8 18:10:22 EDT 2003
Shimuke=x, Region=x,x,x PowerOnKey=xxxxx

# PRV-LX1 Status LED's

| Ass'y | Ass'y No. | ST LED | Function | | Status of LED on |
|---|---|---|---|---|---|
| PWRB | DWZ1106 | D9 | HDD_IND | HDD access indicator | HDD access |
| | | D10 | V+5VSB | Check STB +5V line | Output +5V from Power supply (STB+5V line) |
| | | D11 | V+5V | Check +5V line | Output +5V from Power supply (+5V line) |
| | | D12 | V+3.3VD | Check +3.3V line | Output +3.3V from IC201 |
| | | D13 | V+2.5VD | Check +2.5V line | Output +2.5V from IC101 |
| | | D19 | V+5VSB_M | Check STB+5V line for MB | Output +5V from RY1 (+5VSB line) |
| | | D24 | FAN DET | Check FAN status | STB or FAN status is okay<br>Without Option Drive: Check REAR and Drive1 FAN all time<br>With Option Drive: Check REAR, Drive1 and Drive2 FAN all time |
| | | D25 | PS_ON | Check PS_ON signal from MB | Output high level signal from STB or MB<br>When D25 is on, D11, D12 and D13 are off.<br>PS-ON sequence<br>1. Turn on the rear power switch -> Light on D10, D24 and D25<br>2. Turn on the front power switch -> D19 light on,<br>and then D25 light off, next D11, D12 and D13 light on.<br>finally D681(USBB) light on. |
| PCIB | DWP1080 | D2101 | V-12V | Check PCI -12V line | Output -12V from MB |
| | | D2102 | V+12V | Check PCI +12V line | Output +12V from MB |
| | | D2301 | V+5M | Check PCI +5V | Output +5V from MB, TH2351(PolySwitch) is okay |
| | | D2304 | FPGA active | Check the status of Xilinx IC | Default: light on, trance far data: blink |
| | | D2305 | PTD[0] | Status: the encoder [0] | Error status (power on) |
| | | D2306 | PTD[1] | Status: the encoder [1] | |
| | | D2307 | PTD[2] | Status: the encoder [2] | |
| | | D2308 | PTD[3] | Status: the encoder [3] | |
| | | | | | |
| DECB | | D1181 | PTD[0] | Status: the decoder [0] | Normal: |
| | | D1182 | PTD[1] | Status: the decoder [1] | |
| | | D1185 | PTD[2] | Status: the decoder [2] | |
| | | D1186 | PTD[3] | Status: the decoder [3] | Error Status: |
| | | | | | |
| AVIB | DWV1198 | D3201 | V+12I | Check +12V line | Output +12V from PWRB |
| | | D3202 | V+5DI | Check +5V line | Output +5V from PWRB, IC3205 (ICP-S2.3) is okay |
| | | D3203 | V+3_3I | Check +3.3V line | Output +3.3V from PWRB |
| | | D3204 | V+2_5I | Check +2.5V line | Output +2.5V from PWRB |
| | | D5001 | ENC OK | Check the status of Xilinx IC | Default: light on, transfer data: blink |
| | | D5002 | WMKD7 | Status the encoder [3] | =PCIB Error Status: |
| | | D5003 | WMKD6 | Status the encoder [2] | |
| | | D5004 | WMKD5 | Status the encoder [1] | |
| | | D5005 | WMKD4 | Status the encoder [0] | |

| LED status | [3][2][1][0] |
|---|---|
| No error | 0000 |
| PCIB Xilinx ( IC2309 ) | 0001 |
| AVIB Xilinx ( IC5004 ) | 0010 |
| reserved | 0011 |
| SDRAM ( IC2404 ) | 0100 |
| Slalom ( IC2001 ) | 0101 |
| Slalom SDRAM ( IC2003 ) | 0110 |
| George ( IC3502 ) | 0111 |
| Vaikilt ( IC5002 ) | 1000 |
| Aprilia ( IC6003 ) | 1001 |
| Celynx ( IC4001 ) | 1010 |
| Dvxcel ( IC7004 ) | 1011 |
| Audery ( IC6002 ) | 1100 |

| | |
|---|---|
| Play | random |
| Stop | All LED turn off |

| | |
|---|---|
| Flash writing NG | All LED turn on |
| Xilinx Configuration Error | all LED blink 1sec by 1sec |
| SH SDRAM Error | D1181 turns on |
| Video Encoder Initialize Er | D1182 turns on |
| AV1 Initialize Error | D1185 turns on |
| AV1 SDRAM Error | D1186 turns on |

# PRV-LX1 Trouble Shooting

**Items needed:** **USB Keyboard**
**VGA Monitor**
**USB Mouse**
**Volt Meter**
**Network Crossover Cable**
**Service Manual**
**Test Discs (DVDR, DVDRW)**
**Service Remote GGF1381 or GGF1067**

**Overview: The PRV-LX1 is a Computer based product with wireless remote control capability and a front panel interface. Basic overall troubleshooting of this device will be similar to that of a Personal Computer.**

| Condition | Check | Counter Measure |
|---|---|---|
| No standby light with the main power switch on (back panel). | Check condition of LED (D10) located on the (PWRB) board. | If LED is off check ICP (IC8) and supply from ATX power board. Possible defective ATX or PWRB board. |
| | Check (D10) on (RED). | Check connector CN3 (PWRB) to (FLKB). Possible defective PWRB Board. |

| Condition | Check | Counter Measure |
|---|---|---|
| Standby light changes to green but no startup. | Check FL display and monitor output. | If no display or monitor check CPU, memory module and BIOS short pin. (1 & 2 JP14) and FLKB assy. |
| No startup “Please Wait” on display. | Check CMOS checksum error on VGA screen. | Press F1 to load a new BIOS value. |
| | | Check 2.5V Battery. |
| | Connect VGA and read screen messages. | If error reads (non-system disc) replace hard disc drive. |
| “Detecting IDE Drivers” Displays on PC screen. | Check all drives. | Disconnect DVDR drives one by one, possible defective drive hanging startup. |
| “Please Wait” flashing on front panel display when the standby power switch has been pressed and power cannot be shutoff. | Connect VGA and read messages. “Boot Disc failure, insert system disc and press enter”. | Check DC supply to hard disc drive and flat IDE cable.<br><br>Replace drive. |
| “Please Wait” flashing on front panel and constant beep sound. | No display on monitor and no VGA output. | Memory module could be dislodged of defective. Or possibly defective main board. |
| On the FL display errors read >>>>>>> | FSCK-ERROR BOOT/USR<br>FSCK-ERROR HOME<br>FSCK-ERROR VAR<br>POWER ON FSCK-ERROR | Operating system needs to be reinstalled or hard disk replaced |

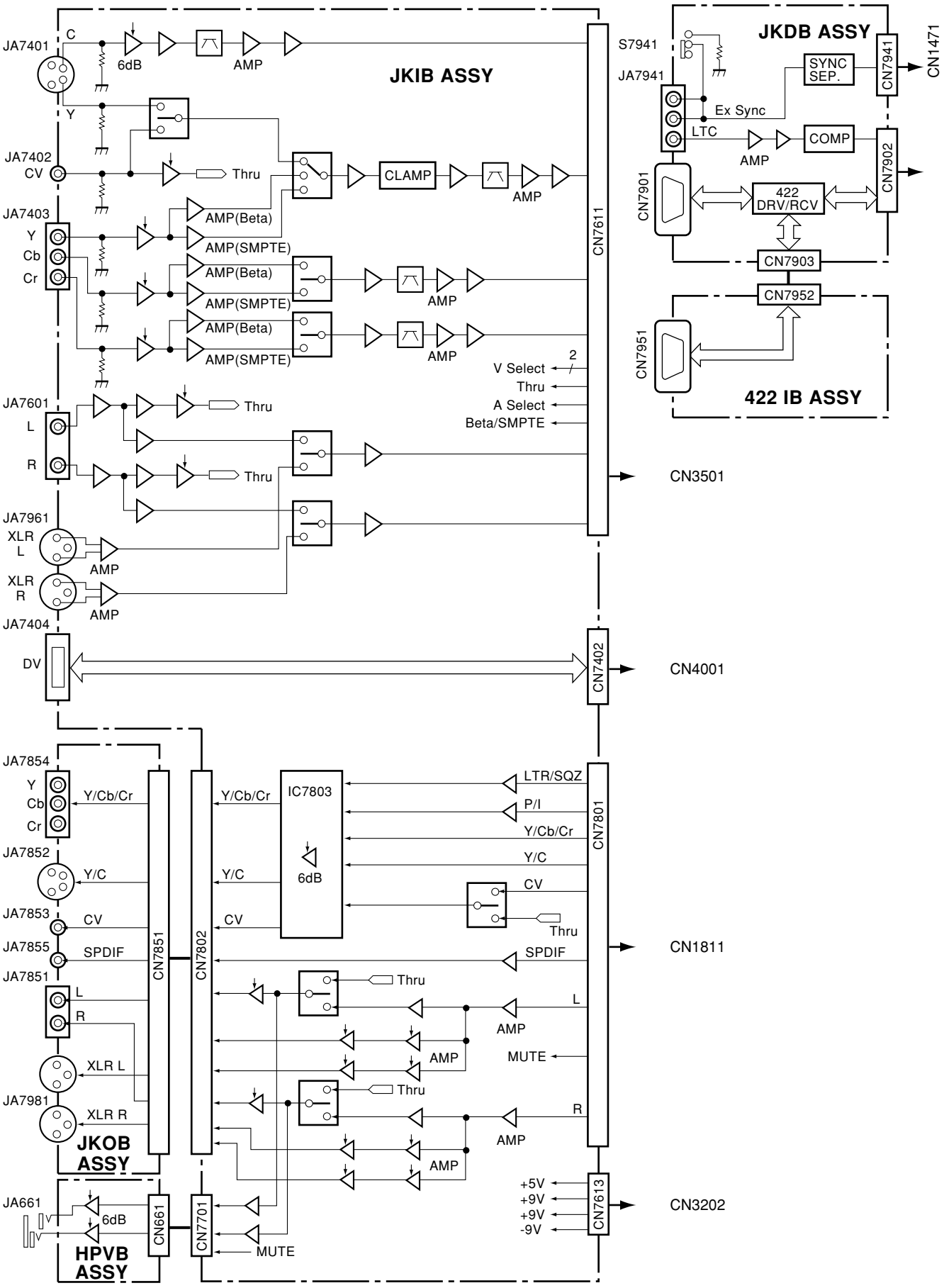
| Condition | Check | Counter Measure |
|---|---|---|
| FL display reads: "NO BOARD ENCODER" Log File Reads: "NO ENCODER BOARD!!!!AGAIN!!!!" | Check all connectors on PCIB board and connection to main PC board. | Reseat board into PCI slot.<br><br>Replace PCIB board. |
| FL display reads: "NO BOARD DECODER" Log File Reads: "NO DECODER BOARD!!!!AGAIN!!!!" | Check all connectors on DECB board and connection to main PC board. | Reseat board into PCI slot.<br><br>Replace DECB board. |
| No record or playback from hard disc or drive 1 or 2. | Check connection to main board from PCIB and DECB boards. | Reseat boards into PCI slot.<br><br>Replace PCIB or DECB boards. |
| No Video or Audio inputs. Through mode output OK. | Video input at pin 10 (CN3501) AVIB board.<br>If present>>>>>>>>>>><br>No signal>>>>>>>>>> | <br><br>Check or replace AVIB.<br>Check or replace JKIB. |
| No Video or Audio outputs. Through mode output OK. | Check DECB assy. | Check all connectors and reseat into PCI slot.<br><br>Replace DECB board. |
| No output from Video or Audio connectors. | Check LED's D3201, D3202, D3203, D3204.<br>If all LED's are on>>><br>If any LED's are Off>> | Check all connectors to the AVIB board.<br>Power Supply is OK.<br>Check power supply.<br>Replace AVIB board. |
| No DV input or output. | Check operation setup.<br><br>Check JKIB, AVIB and DECB connectors. | Wrong settings in Function Menu. |

| Condition | Check | Counter Measure |
|---|---|---|
| No RS422 control.>>>><br><br><br>No RS232 control.<br>No LAN control. | Check operation setup.<br>Check JKDB and PCIB connectors.<br>Run Loop Back Test in service mode. | Correct settings in Function Menu. |
| Not locking on External Sync input. | Check operation setup (rear panel switch).<br><br>Check JKDB and DECB connectors. | Correct switch setting. |

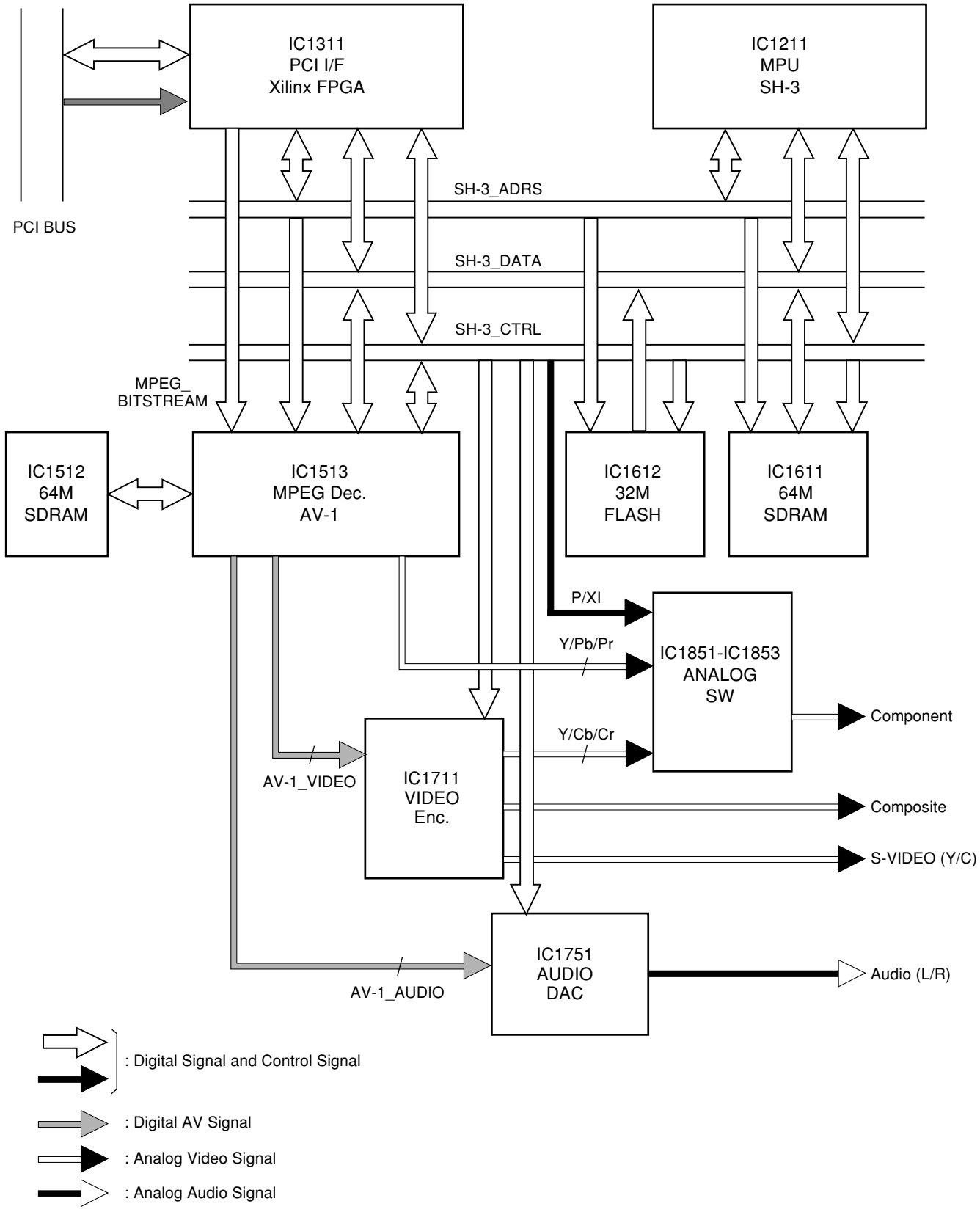
## Notes:

**Utilizing Service Mode in conjunction with the monitor output, front panel display and VGA output will considerably shorten troubleshooting time.**
**(See Service mode & Log File sections)**

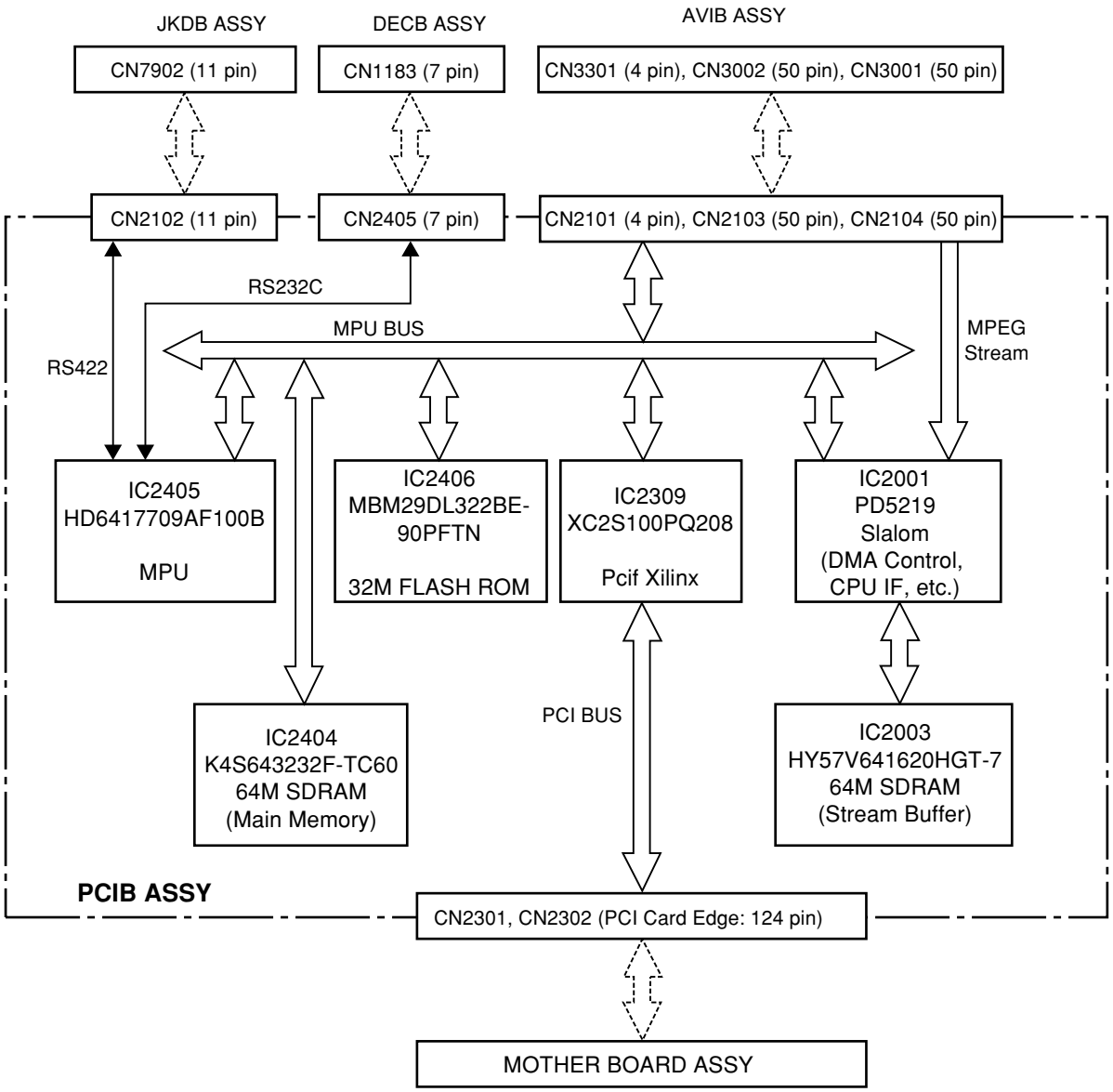
**Most all PC board assemblies in this device have LED Status indicators that can be used to detect problems.**
**(See LED Status section)**


JKIB ASSY
JA7401
C
6dB
AMP
Y
JA7402
CV
Thru
CLAMP
AMP
JA7403
Y
Cb
Cr
AMP(Beta)
AMP(SMPTE)
AMP(Beta)
AMP(SMPTE)
AMP(Beta)
AMP(SMPTE)
AMP
AMP
CN7611
2
V Select
Thru
A Select
Beta/SMPTE
JA7601
L
R
Thru
Thru
JA7961
XLR L
XLR R
AMP
AMP
JA7404
DV
CN7402
CN4001
CN3501
JKDB ASSY
S7941
JA7941
SYNC SEP.
CN7941
CN1471
Ex Sync
LTC
AMP
COMP
CN7902
CN7901
422 DRV/RCV
CN7903
CN7952
CN7951
422 IB ASSY
JA7854
Y
Cb
Cr
Y/Cb/Cr
JA7852
Y/C
JA7853
CV
JA7855
SPDIF
JA7851
L
R
XLR L
JA7981
XLR R
JKOB ASSY
CN7851
CN7802
Y/Cb/Cr
Y/C
CV
IC7803
6dB
LTR/SQZ
P/I
Y/Cb/Cr
Y/C
CV
Thru
SPDIF
CN7801
CN1811
Thru
L
AMP
AMP
MUTE
Thru
R
AMP
AMP
JA661
6dB
CN661
CN7701
MUTE
HPVB ASSY
+5V
+9V
+9V
-9V
CN7613
CN3202

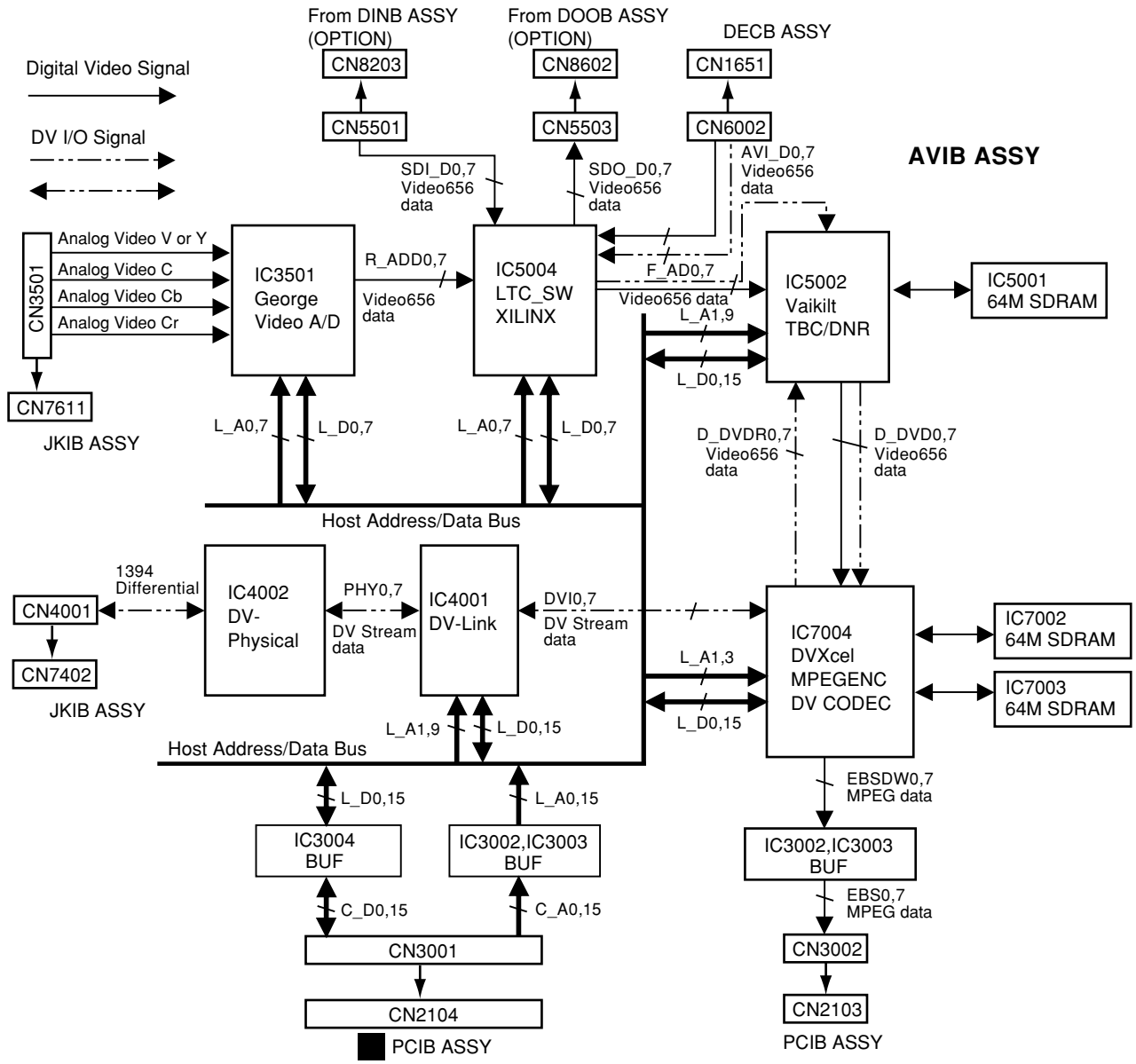
## DECB ASSY

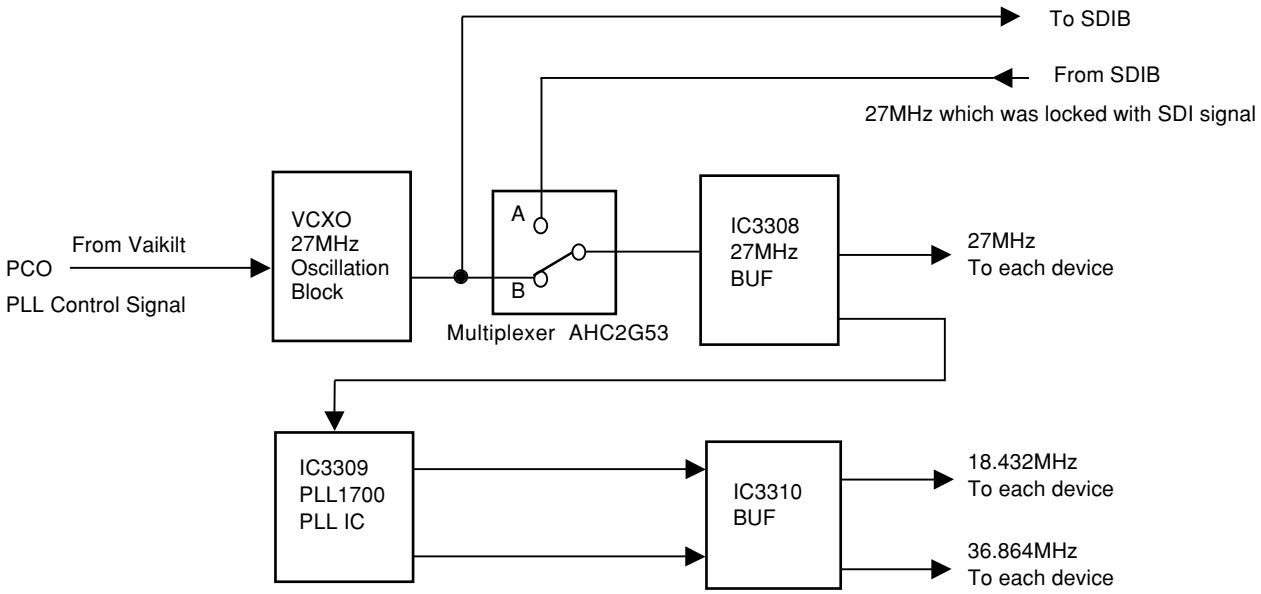

IC1311
PCI I/F
Xilinx FPGA
IC1211
MPU
SH-3
PCI BUS
SH-3_ADRS
SH-3_DATA
SH-3_CTRL
MPEG_
BITSTREAM
IC1512
64M
SDRAM
IC1513
MPEG Dec.
AV-1
IC1612
32M
FLASH
IC1611
64M
SDRAM
P/XI
Y/Pb/Pr
IC1851-IC1853
ANALOG
SW
Component
Y/Cb/Cr
AV-1_VIDEO
IC1711
VIDEO
Enc.
Composite
S-VIDEO (Y/C)
IC1751
AUDIO
DAC
Audio (L/R)
AV-1_AUDIO
: Digital Signal and Control Signal
: Digital AV Signal
: Analog Video Signal
: Analog Audio Signal

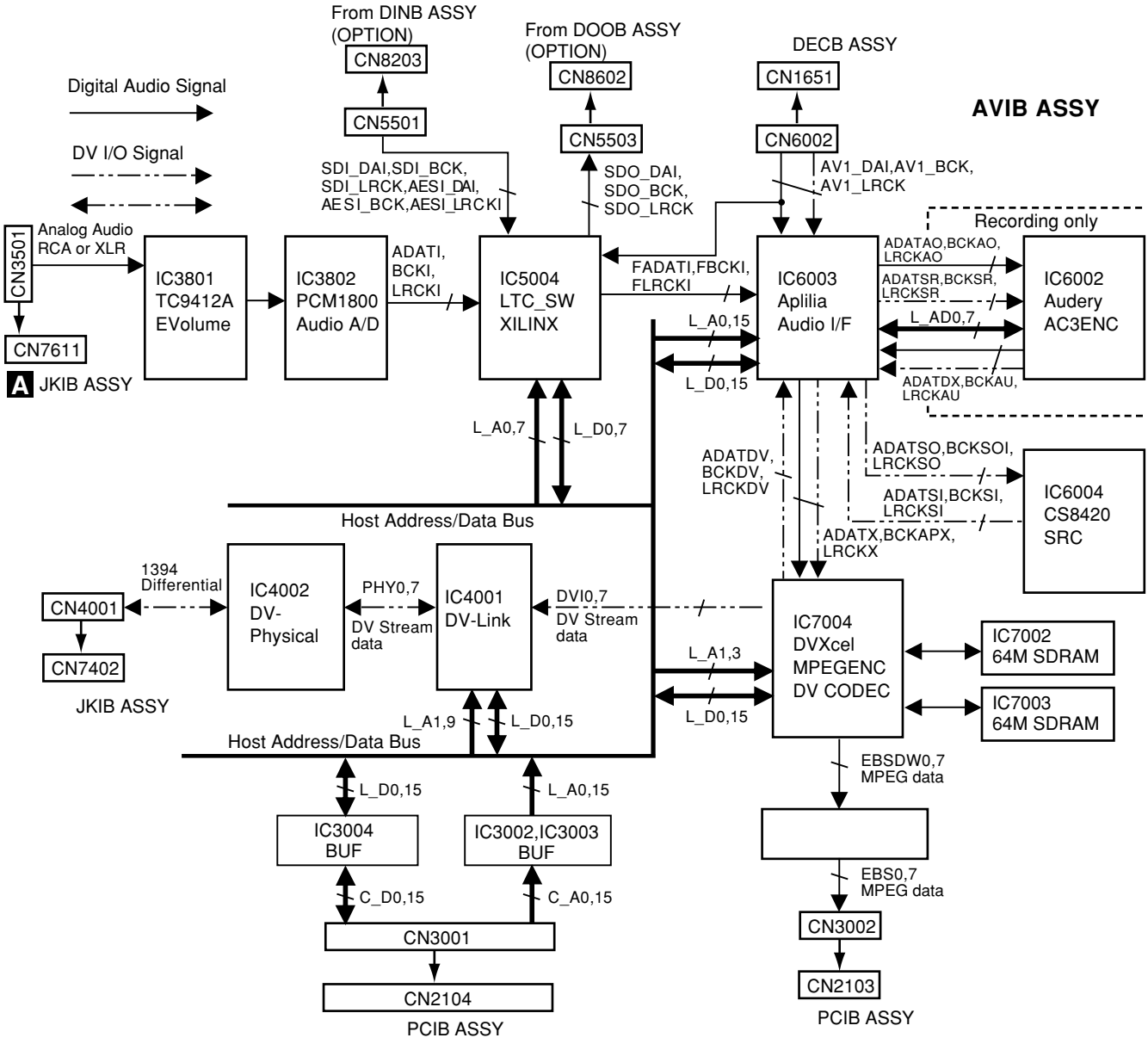
# PCIB ASSY


JKDB ASSY
DECB ASSY
AVIB ASSY
CN7902 (11 pin)
CN1183 (7 pin)
CN3301 (4 pin), CN3002 (50 pin), CN3001 (50 pin)
CN2102 (11 pin)
CN2405 (7 pin)
CN2101 (4 pin), CN2103 (50 pin), CN2104 (50 pin)
RS232C
MPU BUS
RS422
MPEG
Stream
IC2405
HD6417709AF100B
MPU
IC2406
MBM29DL322BE-
90PFTN
32M FLASH ROM
IC2309
XC2S100PQ208
Pcif Xilinx
IC2001
PD5219
Slalom
(DMA Control,
CPU IF, etc.)
PCI BUS
IC2404
K4S643232F-TC60
64M SDRAM
(Main Memory)
IC2003
HY57V641620HGT-7
64M SDRAM
(Stream Buffer)
PCIB ASSY
CN2301, CN2302 (PCI Card Edge: 124 pin)
MOTHER BOARD ASSY

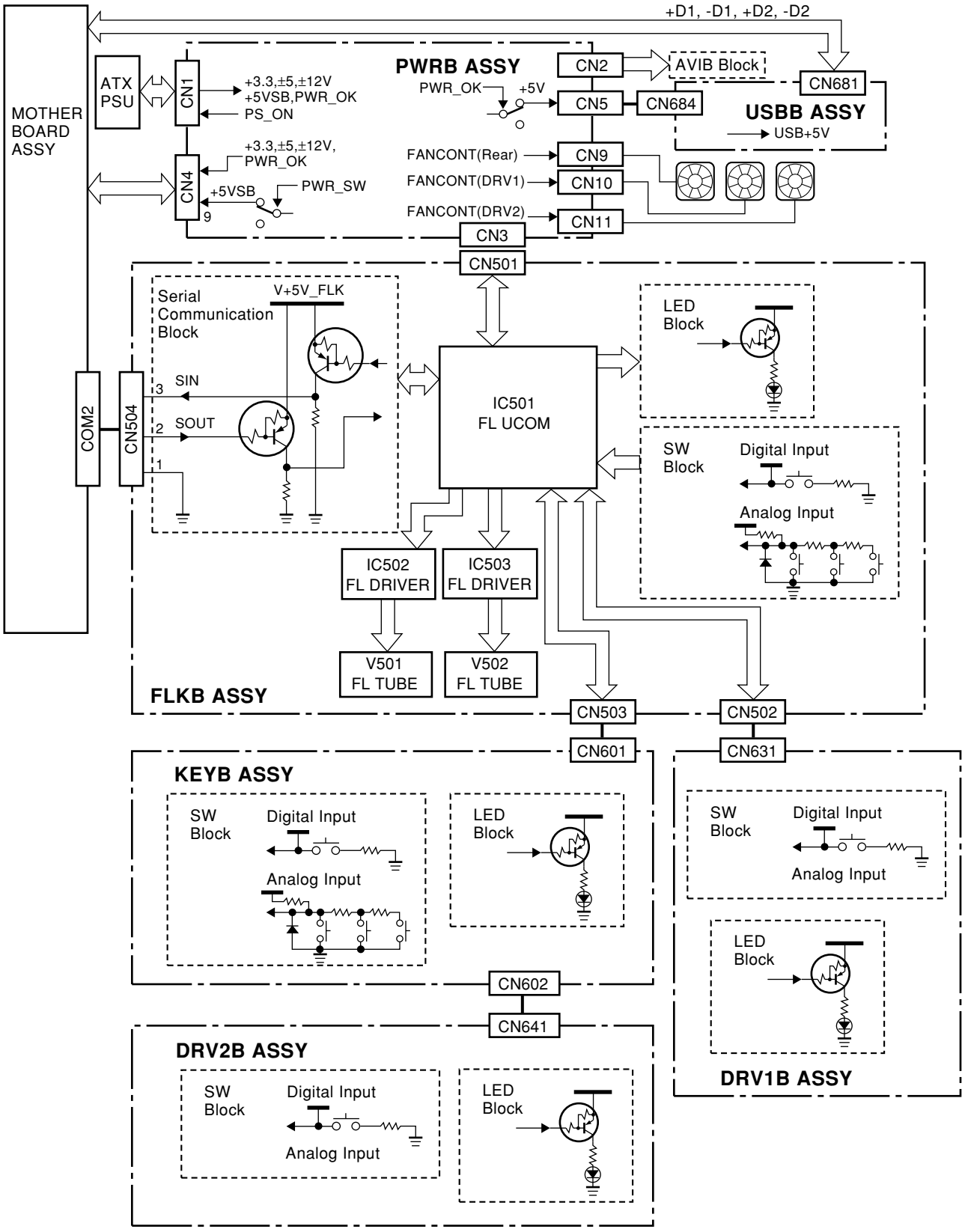
# AVIB ASSY

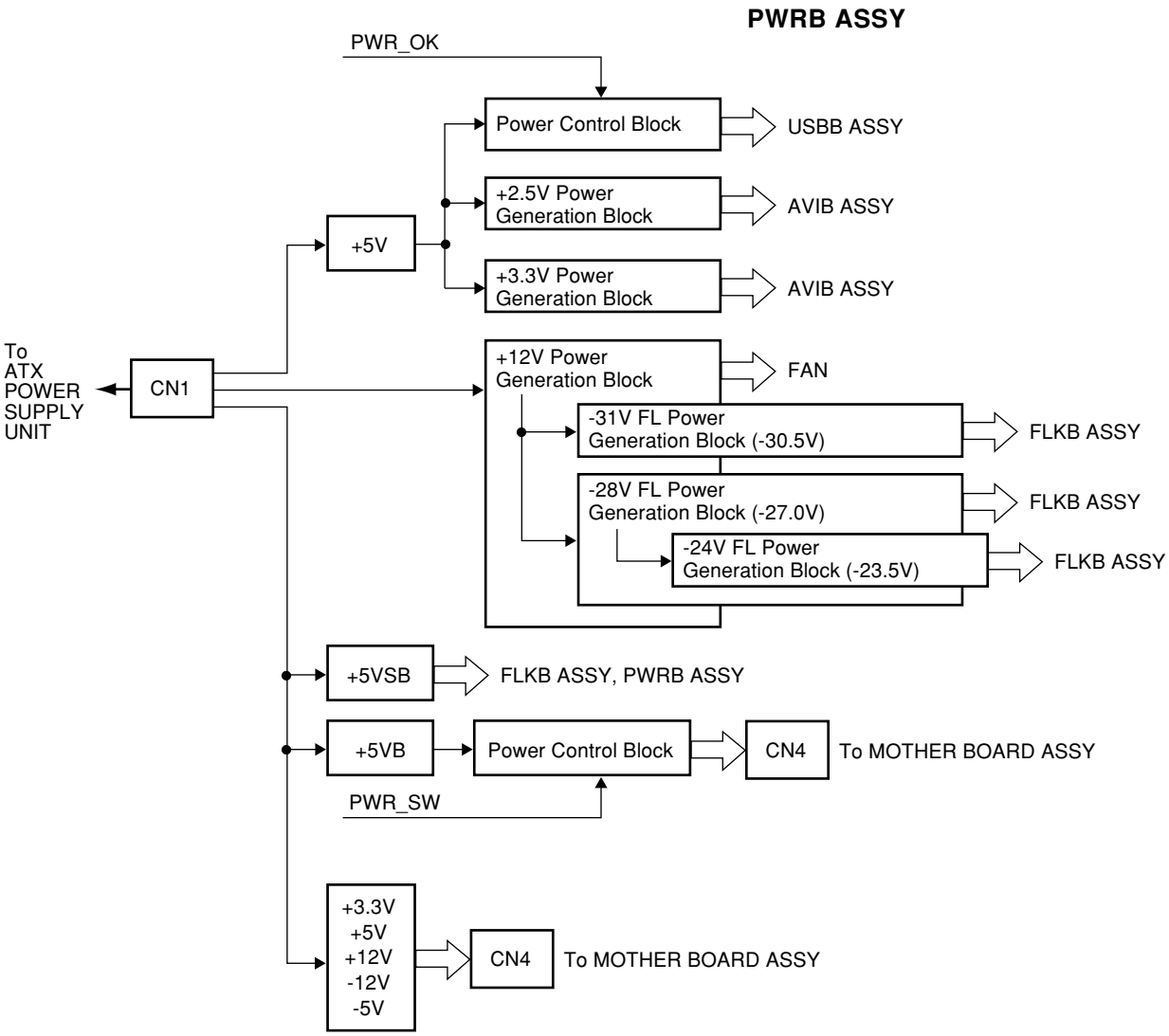

From DINB ASSY (OPTION)
From DOOB ASSY (OPTION)
DECB ASSY
Digital Video Signal
DV I/O Signal
CN8203
CN8602
CN1651
CN5501
CN5503
CN6002
AVIB ASSY
SDI_D0,7 Video656 data
SDO_D0,7 Video656 data
AVI_D0,7 Video656 data
CN3501
Analog Video V or Y
Analog Video C
Analog Video Cb
Analog Video Cr
IC3501 George Video A/D
R_ADD0,7
Video656 data
IC5004 LTC_SW XILINX
F_AD0,7
Video656 data
IC5002 Vaikilt TBC/DNR
IC5001 64M SDRAM
L_A1,9
L_D0,15
CN7611
JKIB ASSY
L_A0,7
L_D0,7
L_A0,7
L_D0,7
D_DVDR0,7 Video656 data
D_DVD0,7 Video656 data
Host Address/Data Bus
1394 Differential
CN4001
CN7402
JKIB ASSY
IC4002 DV-Physical
PHY0,7
DV Stream data
IC4001 DV-Link
DVI0,7
DV Stream data
IC7004 DVXcel MPEGENC DV CODEC
IC7002 64M SDRAM
IC7003 64M SDRAM
L_A1,3
L_D0,15
L_A1,9
L_D0,15
Host Address/Data Bus
EBSDW0,7 MPEG data
L_D0,15
L_A0,15
IC3004 BUF
IC3002,IC3003 BUF
IC3002,IC3003 BUF
C_D0,15
C_A0,15
EBS0,7 MPEG data
CN3001
CN3002
CN2104
CN2103
PCIB ASSY
PCIB ASSY

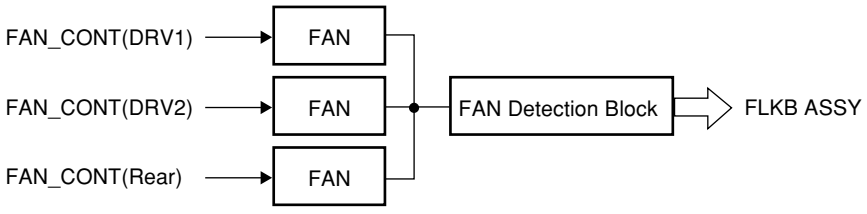

To SDIB
From SDIB
27MHz which was locked with SDI signal
From Vaikilt
PCO
PLL Control Signal
VCXO 27MHz Oscillation Block
A
B
Multiplexer AHC2G53
IC3308 27MHz BUF
27MHz To each device
IC3309 PLL1700 PLL IC
IC3310 BUF
18.432MHz To each device
36.864MHz To each device


From DINB ASSY
(OPTION)
CN8203
CN5501
From DOOB ASSY
(OPTION)
CN8602
CN5503
DECB ASSY
CN1651
CN6002
AVIB ASSY
Digital Audio Signal
DV I/O Signal
SDI_DAI,SDI_BCK,
SDI_LRCK,AESI_DAI,
AESI_BCK,AESI_LRCKI
SDO_DAI,
SDO_BCK,
SDO_LRCK
AV1_DAI,AV1_BCK,
AV1_LRCK
Recording only
CN3501
Analog Audio
RCA or XLR
IC3801
TC9412A
EVolume
IC3802
PCM1800
Audio A/D
ADATI,
BCKI,
LRCKI
IC5004
LTC_SW
XILINX
FADATI,FBCKI,
FLRCKI
IC6003
Aplilia
Audio I/F
ADATAO,BCKAO,
LRCKAO
ADATSR,BCKSR,
LRCKSR
L_AD0,7
IC6002
Audery
AC3ENC
CN7611
A JKIB ASSY
L_A0,15
L_D0,15
ADATDX,BCKAU,
LRCKAU
L_A0,7
L_D0,7
ADATDV,
BCKDV,
LRCKDV
ADATSO,BCKSOI,
LRCKSO
ADATSI,BCKSI,
LRCKSI
IC6004
CS8420
SRC
Host Address/Data Bus
ADATX,BCKAPX,
LRCKX
1394
Differential
IC4002
DV-
Physical
PHY0,7
IC4001
DV-Link
DVI0,7
DV Stream
data
DV Stream
data
CN4001
CN7402
JKIB ASSY
IC7004
DVXcel
MPEGENC
DV CODEC
IC7002
64M SDRAM
IC7003
64M SDRAM
L_A1,3
L_D0,15
L_A1,9
L_D0,15
Host Address/Data Bus
EBSDW0,7
MPEG data
L_D0,15
L_A0,15
IC3004
BUF
IC3002,IC3003
BUF
EBS0,7
MPEG data
C_D0,15
C_A0,15
CN3001
CN3002
CN2104
CN2103
PCIB ASSY
PCIB ASSY

# PWRB, FLKB, KEYB, DRV1B, DRV2B, and USBB ASSYS




PWRB ASSY
PWR_OK
Power Control Block
USBB ASSY
+2.5V Power Generation Block
AVIB ASSY
+5V
+3.3V Power Generation Block
AVIB ASSY
To ATX POWER SUPPLY UNIT
CN1
+12V Power Generation Block
FAN
-31V FL Power Generation Block (-30.5V)
FLKB ASSY
-28V FL Power Generation Block (-27.0V)
FLKB ASSY
-24V FL Power Generation Block (-23.5V)
FLKB ASSY
+5VSB
FLKB ASSY, PWRB ASSY
+5VB
Power Control Block
CN4
To MOTHER BOARD ASSY
PWR_SW
+3.3V
+5V
+12V
-12V
-5V
CN4
To MOTHER BOARD ASSY


FAN_CONT(DRV1)
FAN
FAN_CONT(DRV2)
FAN
FAN_CONT(Rear)
FAN
FAN Detection Block
FLKB ASSY

# How to install upgrades or the Program Operating System

1. **With the unit in the "Standby condition" press Enter and Standby for at least 3 seconds. Wait for the unit to power up and tray one will open automatically. Florescent display will read "Program-Install".**

2. **Insert the Program Disc and press Enter for 2 seconds. Florescent display will read "Download-Full".**

3. **Using the composite video output monitor the program downloading progress.**

4. **When the program has finished downloading both DVDR trays will open automatically and the unit will power down back to standby condition. (Leaving the trays open).**

5. **Power the unit back up and check for revision update numbers by entering the Function menu/Setup/System/Information.**

**Note: Total upgrade time will be about 5 minuets**